

WHAT IS CLAIMED:

1. A method of making an electro-mechanical roll for an electrostatographic apparatus comprising:

providing a plurality of tubes, each of the tubes having an outside surface and a length and two ends, the tube material comprising at least one of an elastomer and polymer formulation;

cutting at least one end of each of the plurality of tubes to form a selected end geometry;

providing an electrically conductive member;

disposing the plurality of tubes on the electrically conductive member in a tandem relationship; and

positioning the plurality of tubes such that each of the tubes are located up to 0.3 inches apart from another tube.

2. The method of making an electro-mechanical roll of **claim 1**, further comprising cleaning the electrically conductive core prior to disposing the plurality of tubes thereon.

3. The method of making an electro-mechanical roll of **claim 1**, further comprising applying an adhesive to the core member.

4. The method of making an electro-mechanical roll of **claim 1**, further comprising applying a lubricant to the electrically conductive core prior to disposing the plurality of tubes thereon.

5. The method of making an electro-mechanical roll of **claim 1**, further comprising contacting at least one end of each tube with an end of another tube.

6. The method of making an electro-mechanical roll of **claim 1**, further comprising applying compression of at least 1 gram/sq. mm to the outside surface of the tubes.

7. The method of making an electro-mechanical roll of **claim 3**, further comprising allowing the adhesive to cure.

8. The method of making an electro-mechanical roll of **claim 7**, further comprising grinding the circumference of the outside surface.

9. The method of making an electro-mechanical roll of **claim 1**, further comprising applying a coating on the outside surface of the tubes.

10. The method of making an electro-mechanical roll of **claim 9**, further comprising allowing the coating to dry.

11. The method of making an electro-mechanical roll of **claim 1**, further comprising positioning the tubes such that each tube is located up to 0.1 inches away from another tube.

12. A method of making an electro-mechanical roll comprising:

- providing a plurality of tubes, each of the tubes having an outside surface, a length of at least 0.5 inches, and two ends;
- cutting an end portion of selected tubes to form selected geometries for matching joining regions between ends of adjacent tubes;
- providing a core member;
- applying an adhesive layer to the core member;
- disposing the plurality of tubes on the core member and matching joining regions between selected geometries of adjacent tubes;
- contacting the joining regions together;
- applying compression of at least 1 gram/sq. mm to the outside surface;
- allowing the adhesive to cure;
- grinding the circumference of the outside surface;
- applying a coating on the outside surface; and
- allowing the coating to dry.

13. The method of making an electro-mechanical roll of **claim 12**, further comprising using a molding process to form the plurality of tubes.

14. The method of making an electro-mechanical roll of **claim 12**, further comprising using a foaming process to form the plurality of tubes.

15. The method of making an electro-mechanical roll of **claim 12**, further comprising using an extrusion process to form the plurality of tubes.

16. A method of making an electro-mechanical roll for an electrostatographic apparatus comprising:

providing an electrically conductive core having a length and an outside surface;

providing a plurality of conformable members, each of the plurality of members having a length;

disposing the plurality of conformable members coaxially over a portion of the outside surface of the electrically conductive core; and

positioning the plurality of members in tandem relationship to one another along the outside surface of the electrically conductive core such that no tube is located greater than 0.3 inches from another tube.

17. The method of making an electro-mechanical roll of **claim 16**, further comprising applying a coating over the plurality of conformable members.

18. The method of making an electro-mechanical roll of **claim 16**, further comprising providing a plurality of members including a polymer and an electrically conductive core including a stainless steel.

19. The method of making an electro-mechanical roll of **claim 16**, further comprising providing each conformable member in the form of a tube-shaped segment having a length ranging from 0.5 inches to 18 inches.

20. The method of making an electro-mechanical roll of **claim 19**, further comprising providing from 2 to 24 tube shaped segments on the electrically conductive core.

21. The method of making an electro-mechanical roll of **claim 16**, further comprising providing an electrically conductive core having a non-round cross-section and providing a tube shaped segment having a substantially round circumference and having an interior cross-section substantially matching the non-round cross-section of the electrically conductive core.

22. The method of making an electro-mechanical roll of **claim 16**, further comprising providing each of the members including a different material.

23. The electro-mechanical roll of **claim 16**, further comprising installing the electro-mechanical roller in an electrostatographic apparatus for use as at least one of a bias transfer roll, bias charging roll, decurling roll, cleaning roll, and paper handling roll.

24. The electro-mechanical roll of **claim 16**, further comprising installing the electro-mechanical roller in a xerographic apparatus.